The glycemic index and glycemic load are a weak form of low-carb strategy with questionable efficacy as a primary strategy, but they may still have some use in encouraging carbohydrate restriction. The glycemic index was originally intended to address the experimental effect of carbohydrate on blood glucose, but it turns out that the effect of foods on blood glucose is not easily predictable and must be determined experimentally.

Glycemic index (GI) is defined as the area under the blood glucose time curve during the first two hours after consumption of 50 grams of carbohydrate-containing food. GI is an intensive variable, meaning that it measures the amount of glucose per gram of carbohydrate, rather than the total amount of glucose consumed. This can be misleading, as a food with a low GI may still have a large effect on blood glucose if a lot of it is consumed. The glycemic load (GL) attempts to correct for this by multiplying the GI by the grams of carbohydrate in a sample of a particular food.

GL is also an intensive variable, and it still requires knowing how much of a food is consumed to determine its effect on blood glucose. Additionally, the overall character of using GL must be considered, as a slice of white bread has a high GI, but the GI will go down if butter is added to it. This is because fat slows the digestion and absorption of carbohydrates.

One final ambiguity with GI is that it measures blood glucose, not fructose. Fructose is a sugar that is partially converted to glucose in two hours, which is why the GI of fructose is 20 and not zero. However, more fructose is converted to glucose after that time, which compromises any assertion about the differences in effect of the two sugars. Sucrose has a GI of 70, which is roughly the average of glucose and fructose. This means that ice cream has a lower GI than potatoes, but it is not recommended due to its high fructose content.

The glycemic index has evolved into a politically correct form of carbohydrate restriction, but it is questionable whether it has any value at all. Eric Westman, who has experience with both kinds of diets, put it well: “if low-GI is good, why not no-GI?” In comparison to simply reducing carbohydrate, low-GI strategies are complicated and require looking up and calculating values, which may be appealing to some but annoying to most.

The difference between intensive variables, such as caloric density, and extensive variables, such as total carbohydrate eaten, was brought out at the beginning of the quiz. Two bowls of cereal have the same GI as one. If there is not much carbohydrate (or really much glucose) in a food, it will have a low GI, but it could still have a large effect if a lot of it is consumed.

The glycemic load attempts to correct for this problem. The glycemic load (GL) is defined as the GI multiplied by the grams of carbohydrate in a sample of a particular food. Obviously, GL is still an intensive variable. You still have to know how much is consumed. There is also the overall character of using GL: a slice of white bread has a high GI. The GI will go down if you smear a tablespoon of butter on the bread. It will go down still further if you add two tablespoons of butter.

If you could somehow butter infinitely, until for all intents and purposes you have pure butter, you would have a GI = 0, which is probably not helpful for those who want to use the GI as a

guide to eating. One final ambiguity: GI measures blood glucose. Fructose, a sugar of great current interest (because it is 50 percent of sucrose and slightly more than 50 percent of high-fructose corn syrup), is partially converted to glucose in two hours, which is why the GI of fructose is 20 and not zero. In fact, more is converted after that time, severely compromising any assertion about the differences in effect of the two sugars. Sucrose has a GI of 70, which is roughly the average of glucose and fructose. Thus, ice cream has a lower GI than potatoes. Yet now we can't recommend ice cream because of the high fructose. Lower GI or lower fructose?

How can you do both without saying "low-carbohydrate" out loud? This tangled web is woven out of the failure to face scientific facts. This aspect of the nutritional crisis is probably best addressed by ignoring glycemic index altogether. The work of Volek and Forsythe provides a good reason to focus on the carbohydrate content of your diet. What about the type of carbohydrate, though? In other words, is glycemic index important? Is fructose as bad as they say? Consistent with the small perturbation caused by fructose compared to glucose, as shown in the previous chapter, we have a good